

**Practice: 642 - Water Well****Scenario: #1 - Plastic Casing for unconsolidated geologic sites with unstable rock formations****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur 100 - 600 feet of the ground surface in unstable (unconsolidated) geologic formations. The well shall be drilled, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or micro-irrigation. An average well depth is 400 feet. Well casings are 4-6" in diameter. Plastic casing is installed to a depth of 390 feet.

**Before Situation:**

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

**After Situation:**

Sufficient water is available for livestock or micro-irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:** Linear ft. of depth

**Scenario Unit:** Linear Foot

**Scenario Typical Size:** 400

**Scenario Cost:** \$8,169.22

**Scenario Cost/Unit:** \$20.42

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$167.38	23	\$3,849.74
Concrete, CIP, formless, non reinforced	36	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$109.10	0.25	\$27.28
<b>Materials</b>						
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$650.97	2	\$1,301.94
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.79	1	\$2.79
Well Cap, 6"	1786	Well cap, 6". Materials only.	Each	\$33.29	1	\$33.29
Well Casing, Plastic, 6"	1804	PVC or ABS non-threaded well casing, 6". Materials only.	Foot	\$6.46	390	\$2,519.40
Well Screen, plastic, 6"	1999	6" PVC well screen. Materials only.	Foot	\$13.62	10	\$136.20
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$40.64	1	\$40.64
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$257.94	1	\$257.94

**Practice: 642 - Water Well****Scenario: #2 - Steel casing for consolidated geologic sites with stable rock formations****Scenario Description:**

Typical construction is for the installation of a well, in areas where sufficient water is known to occur 100 - 600 feet of the ground surface in stable (consolidated) geologic formations. The well shall be drilled, driven, bored, jetted or otherwise constructed to an aquifer for water supply. The purpose of the practice is to provide water for livestock or micro-irrigation. An average well depth is 400 feet. Well casings are 4-6" in diameter. Steel casing is installed to a depth of 100 feet.

**Before Situation:**

Livestock have insufficient water or are fenced from their water source. There is insufficient water for use in micro-irrigation.

**After Situation:**

Sufficient water is available for livestock or micro-irrigation. Utilize Pumping Plant (533) and Pipeline (516) as associated practices. Use Critical Area Seeding (342) where necessary to prevent erosion following construction activities.

**Scenario Feature Measure:** Linear ft. of depth

**Scenario Unit:** Linear Foot

**Scenario Typical Size:** 450

**Scenario Cost:** \$6,914.62

**Scenario Cost/Unit:** \$15.37

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Concrete, CIP, formless, non reinforced	36	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$109.10	0.25	\$27.28
Rotary Drill Rig with Operator	1595	Rotary drill rig including equipment and power unit costs and labor.	Hour	\$167.38	23	\$3,849.74
<b>Materials</b>						
Grout, cement	1333	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$650.97	2	\$1,301.94
Chlorine	1335	Liquid chlorine bleach. Includes materials only.	Gallon	\$2.79	1	\$2.79
Well Cap, 6"	1786	Well cap, 6". Materials only.	Each	\$33.29	1	\$33.29
Well Casing, Metal, 6"	1810	Steel well casing, 6". Materials only.	Foot	\$14.01	100	\$1,401.00
Test, Standard Water Test, Well Water	309	Well Water Suitability test. Includes materials and shipping only.	Each	\$40.64	1	\$40.64
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$257.94	1	\$257.94